

SAFETY DATA SHEET
HYDROCHLORIC ACID 1.18 S.G. LRG
According to Regulation (EC) No 1907/2006, Annex II

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Product name	HYDROCHLORIC ACID 1.18 S.G. LRG
Product number	1206
REACH registration number	01-2119484862-27-XXXX
CAS number	7647-01-0
EU index number	017-002-01-X
EC number	231-595-7

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses	General chemical reagent Intermediate Cleaning agent. Water treatment chemical.
Uses advised against	Processes involving alkaline substances or mixtures as this may produce an exothermic reaction. Mixing with cyanide compounds as this will result in the generation of hydrogen cyanide gas. Processes that would lead to occupational exposure without the use of personal protective equipment. Use as described within any supplied exposure scenarios.

1.3. Details of the supplier of the safety data sheet

Supplier	Reagent Chemical Services 18 Aston Fields Road Whitehouse Industrial Estate Runcorn Cheshire WA7 3DL T: 01928 716903 (08.30 - 17.00) F: 01928 716425 E: info@reagent.co.uk
----------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

1.4. Emergency telephone number

Emergency telephone	OHES Environmental Ltd 24-7 Tel. 0333 333 9939 (24 hour)
---------------------	-------------------------------------------------------------

Notes	The product identification numbers refer to hydrogen chloride.
-------	----------------------------------------------------------------

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****Classification (EC 1272/2008)**

Physical hazards	Met. Corr. 1 - H290
Health hazards	Skin Corr. 1B - H314 Eye Dam. 1 - H318 STOT SE 3 - H335
Environmental hazards	Not Classified

HYDROCHLORIC ACID 1.18 S.G. LRG

Classification (67/548/EEC or 1999/45/EC) C;R34. Xi;R37.

Human health Corrosive to skin and eyes. Ingestion will cause burns to the mouth, stomach and gastrointestinal tract. Spray/mists may cause respiratory tract irritation. A single exposure may cause the following adverse effects: Coughing. Difficulty in breathing. Inhalation of concentrations above 5ppm in air can irritate the mucous membranes. Exposure can result in gastritis and bronchitis.

Environmental Although not classified as harmful to the environment the material should not be discharged to land or water systems, this may have an impact on the organisms in the local area. The product is miscible with water and will spread in water systems. The product may produce a local pH change in water systems which can have an effect on aquatic organisms.

Physicochemical Reaction with alkali metals such as sodium or potassium can result in explosion, violent reaction with alkaline earth metals. Hydrogen is produced on reaction with metals. Vigorous to violent reaction with alkalis. Reaction with cyanides and sulphides produces hydrogen cyanide and hydrogen sulphide respectively. Corrosive to skin and eyes, will corrode metal surfaces on sustained or repeated contact.

2.2. Label elements

EC number 231-595-7

Pictogram



Signal word Danger

Hazard statements
 H290 May be corrosive to metals.
 H314 Causes severe skin burns and eye damage.
 H335 May cause respiratory irritation.

Precautionary statements
 P260 Do not breathe vapour/ spray.
 P271 Use only outdoors or in a well-ventilated area.
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P310 Immediately call a POISON CENTER/ doctor.
 P501 Dispose of contents/ container in accordance with local regulations.

Contains HYDROCHLORIC ACID 36 %

Supplementary precautionary statements
 P234 Keep only in original container.
 P261 Avoid breathing vapour/ spray.
 P264 Wash contaminated skin thoroughly after handling.
 P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P312 Call a POISON CENTER/ doctor if you feel unwell.
 P321 Specific treatment (see medical advice on this label).
 P363 Wash contaminated clothing before reuse.
 P390 Absorb spillage to prevent material damage.
 P403+P233 Store in a well-ventilated place. Keep container tightly closed.
 P405 Store locked up.
 P406 Store in corrosive resistant/... container with a resistant inner liner.

HYDROCHLORIC ACID 1.18 S.G. LRG

2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

HYDROCHLORIC ACID 36%		30-60%
CAS number: 7647-01-0	EC number: 231-595-7	REACH registration number: 01-2119484862-27-0000
Classification Skin Corr. 1B - H314 STOT SE 3 - H335	Classification (67/548/EEC or 1999/45/EC) C;R34 Xi;R37	

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

Composition comments An aqueous solution of hydrochloric acid.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information	CAUTION! First aid personnel must be aware of own risk during rescue! Always consider any dangers in the vicinity before approaching to treat the casualty. First aid personnel must protect themselves with all necessary personal protective equipment during the assistance of casualties. When breathing is difficult, properly trained personnel may assist the casualty by administering oxygen. Place unconscious person on the side in the recovery position and ensure breathing can take place. Never give anything by mouth to an unconscious person. Check airway for any blockages. If breathing has stopped perform CPR. If medical assistance is needed take as much detail as possible about the incident and hazardous materials involved with the casualty.
Inhalation	Remove affected person from source of contamination. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. In case of severe exposure or if any discomfort continues get medical attention.
Ingestion	Do not induce vomiting. Rinse mouth thoroughly with plenty of water. Get medical attention immediately.
Skin contact	Remove footwear if contaminated. Immediately remove contaminated clothing and wash before re-use. Rinse immediately with plenty of water. After contact with small amounts get medical attention if any discomfort continues. For large amounts, obtain medical attention.
Eye contact	Promptly wash eyes with plenty of water or eye wash solution while lifting the eyelids. If possible remove any contact lenses and continue to wash. Get medical attention immediately.

4.2. Most important symptoms and effects, both acute and delayed

General information	The severity of the symptoms described will vary dependent on the concentration and the length of exposure. Chemical burns must be treated by a physician. Chronic exposure can lead to dental corrosion.
Inhalation	Irritation of nose, throat and airway. Coughing and irritation of the mucous membranes. Prolonged exposure to vapours or mists can cause damage to the mucous membranes of the respiratory system. Chronic exposure can cause chronic bronchitis. Can produce nasal ulceration and inflammation of the bronchi.
Ingestion	Nausea, vomiting. Burns in the mouth, throat, stomach and gastrointestinal tract. Diarrhoea. Chronic exposure can cause gastritis. Scarring of the digestive system with possible blockages due to internal damage.

HYDROCHLORIC ACID 1.18 S.G. LRG

Skin contact	Chemical burns. Can cause dermatitis.
Eye contact	Causes burns. Corneal damage. Cataracts and glaucoma may develop.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor	Cases of eye contact and ingestion should be treated immediately. Have facilities in place to wash skin and eyes in case of exposure.
-----------------------------	---------------------------------------------------------------------------------------------------------------------------------------

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	The product is non-combustible. Use fire-extinguishing media suitable for the surrounding fire. Water spray, dry powder, carbon dioxide or alcohol resistant foam.
Unsuitable extinguishing media	Do not use water jet as this can spread the fire. Do not use carbon dioxide in enclosed spaces with insufficient ventilation.

5.2. Special hazards arising from the substance or mixture

Specific hazards	In case of fire, toxic and corrosive gases may be formed. Chlorine. Chlorine compounds. Hydrochloric acid vapours. Containers of flammable liquids in the area of the fire can explode upon heating.
Hazardous combustion products	The product is not combustible but can decompose in the event of a fire.

5.3. Advice for firefighters

Protective actions during firefighting	Containers close to the fire area should be cooled with water if safe to do so. Be aware that any flammable substance containers are liable to explode when heated. Prevent run-off from entering drains and watercourses. Plastic containers of the product may melt in the heat of a fire releasing acid vapours.
Special protective equipment for firefighters	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Use protective clothing and equipment as described in section 8 of this datasheet. Provide adequate ventilation. Avoid ingestion, inhalation of vapours and contact with skin and eyes. Restrict access to the area until the spillage is treated, if large amounts of vapours are produced that will be hazardous to others, evacuate the area. Use suitable respiratory equipment if spillages occur in enclosed spaces and vapours are produced. Have emergency procedures in place for treating spillages, evacuating the area and informing the emergency services if necessary. When any other effects of spillages will affect the safety of others the area should be evacuated. Restrict access to the area until the spillage is treated and it is safe to return.
-----------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

6.2. Environmental precautions

Environmental precautions	Avoid unauthorised discharge to the environment. Do not discharge into drains or watercourses or onto the ground. Clean up any spillages immediately, prevent material from spreading and entering drains or sewage systems. If spillages to land cannot be treated safely or if contamination will occur the Environment Agency must be alerted immediately. Large spillages or uncontrolled discharge to water systems must be alerted to the Environmental Agency or other regulatory body. If the substance has entered a foul drain or sewage system in significant quantity to cause a hazard the local Water Treatment Company must be informed.
----------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

6.3. Methods and material for containment and cleaning up

HYDROCHLORIC ACID 1.18 S.G. LRG

Methods for cleaning up

Small Spillages: Absorb with inert, non-combustible material. Large Spillages: Dam and absorb spillages with sand, earth or other inert, non-combustible material. Fit drain covers where they are available if the spillage is likely to enter the drainage system. Provide adequate ventilation. Collect and place in suitable waste disposal containers and seal securely. For waste disposal, see Section 13. Containers with collected spillage must be properly labelled with correct contents and hazard symbol. Wash spillage site well with water and detergent, be aware of the potential for surfaces to become slippery. Wash thoroughly after dealing with a spillage. Ventilate area and allow to dry before allowing access.

6.4. Reference to other sections

Reference to other sections Refer to sections 8 and 13 for additional information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions

Avoid spilling. Avoid contact with skin and eyes. Avoid inhalation of vapours and spray/mists. Avoid ingestion of the product. Do not eat, drink or smoke when handling. Do not mix with incompatible substances or mixtures. Do not use in confined spaces without adequate ventilation and/or respirator. Do not use in areas close to drainage systems unless measures are in place to prevent access of product. Wash at the end of each work shift and before using the toilet. Remove contaminated clothing/footwear/equipment before entering eating areas or other places that would expose others to the substance. Do not dispose of the substance to the environment through unauthorised means. Do not discharge to land or water including the drainage system. Ensure emergency procedures are in place to treat spillages and cope with other situations such as evacuation.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions

Store in area with adequate ventilation and sufficient air movement to prevent any build up of vapours. Store in closed original container at temperatures between 15°C and 25°C. Store away from heat, direct sunlight and moisture. Store away from incompatible materials. Keep above the chemical's freezing point. Store in a stable situation to avoid spillages. It is advisable to store in a bunded area or use other protective measures such as a sump pallet or storage tray. If the substance is transferred to other containers ensure the packaging material is compatible. Consult with the packaging manufacturer or supplier. Do not leave storage containers exposed to the atmosphere as this may result in loss of contents or contamination.

7.3. Specific end use(s)

Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

Occupational exposure limits

HYDROCHLORIC ACID 36%

Long-term exposure limit (8-hour TWA): WEL 1 ppm 2 mg/m³ gas and aerosol mists

Short-term exposure limit (15-minute): WEL 5 ppm 8 mg/m³ gas and aerosol mists

WEL = Workplace Exposure Limit

DNEL

- Inhalation; Short term local effects: 15 mg/m³

Taken from the ECHA website: List of Registered Substances - Toxicity data.

- Inhalation; Long term local effects: 8 mg/m³

HYDROCHLORIC ACID 1.18 S.G. LRG

PNEC

- Fresh water; 36 µg/L
- Taken from the ECHA website: List of Registered Substances - Ecotoxicity data.
- Marine water; 36 µg/L
- Intermittent release; 45 µg/L
- STP; 36 µg/L

HYDROCHLORIC ACID 36% (CAS: 7647-01-0)

DNEL

- Workers - Inhalation; Long term local effects: 8 mg/m³
- Workers - Inhalation; Short term local effects: 15 mg/m³

8.2. Exposure controls

Appropriate engineering controls

Provide adequate general and local exhaust ventilation.

Eye/face protection

Wear approved chemical safety goggles conforming to EN 166.

Hand protection

Use full length gloves. Butyl rubber. Polyvinyl chloride (PVC). Nitrile rubber. Viton rubber (fluoro rubber). For gloves involving total immersion 1.0mm thickness (if available) are recommended, at least 0.5mm and breakthrough time of >480 minutes. For splash resistance use minimum 0.5mm thickness and breakthrough time > 240 minutes. Gloves should have a breakthrough time sufficient for the amount of handling but allow dexterity for safe movement and handling. Gloves showing signs of degradation should be changed to avoid skin contamination. Gloves should carry the CE mark and conform to BS EN 374, chemicals and micro-organisms. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. When packages of the product are being handled during storage or transport it is advisable to wear protective gloves to prevent damage to the skin.

Other skin and body protection

Wear suitable protective clothing during transport, handling and storage operations connected with the product. Protective clothing should conform to the general requirements of EN 340:2003. Also consider EN 13034:2005; EN 14605:2005; EN 943:2002 dependent upon the situation resulting in exposure. Wear suitable protective footwear during handling of the product. When treating spillages it is recommended to wear protective boots, consult with the supplier as to the compatibility. Safety footwear should conform to standards EN 344 - 347. Wear plastic apron and full length gloves if handling large amounts. If there is a risk of splashing then wear a face shield. Have facilities in place to wash eyes in case of contact. If handling large amounts it is recommended to have a safety shower.

Hygiene measures

Remove clothing when contamination will result in exposure to the substance, segregate and wash before re-use. Do not eat, drink or smoke in the work area. Wash at the end of each work shift and before eating, smoking and using the toilet. Remove contaminated clothing when entering eating areas or other places that could lead to contamination of others with the product.

Respiratory protection

Wear suitable respiratory protection when vapours or mists are produced if the Workplace Exposure Limit is exceeded and there is insufficient ventilation or extraction. When vapours are generated during spill clean up operations and exposure of operators is likely then respiratory equipment should be worn. Use respirator fitted with a cartridge suitable for inorganic acids including hydrochloric acid. When the concentration of acid vapours in the atmosphere is sufficient to cause skin irritation then wear a full face respirator. CAUTION: Air purifying respirators do not protect the user in oxygen deficient atmospheres, use air supplied system. Respiratory protection should conform to the following standards. BS EN 140: Half-face masks. BS EN 136: Full face masks. Powered air respirators should meet requirements of EN146 and EN12941. Airline fed respirators should meet the requirements of EN 270 and EN1835. Respiratory protection should be maintained in a proper condition and inspected at the frequency specified by current legislation.

HYDROCHLORIC ACID 1.18 S.G. LRG

Environmental exposure controls See section 6 for details.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance	Liquid.
Colour	Colourless.
Odour	Pungent.
pH	pH (concentrated solution): <1 Not determined. pH (diluted solution): The value will depend on the concentration of the diluted solution but will remain <7
Melting point	Not determined.
Initial boiling point and range	Not determined.
Flash point	Not relevant. The mixture is non-flammable.
Evaporation rate	Not determined.
Evaporation factor	Not determined.
Flammability (solid, gas)	No.
Upper/lower flammability or explosive limits	Not relevant.
Vapour pressure	Not determined.
Vapour density	Not determined.
Relative density	Approx. 1.18 @ @ 20°C
Bulk density	Not relevant.
Solubility(ies)	Not determined. Miscible with water. The product is completely miscible with water.
Partition coefficient	The product contains mainly inorganic substances which are not biodegradable.
Auto-ignition temperature	Not relevant.
Decomposition Temperature	Not determined. During fire the product would decompose.
Viscosity	Not determined.
Explosive properties	Not explosive in its normal state. More sensitive to shock than m-dinitrobenzene: No. More sensitive to friction than m-dinitrobenzene: No. The mixture itself is not explosive but on reaction with metals can produce hydrogen gas which in sufficient concentration will explode.
Explosive under the influence of a flame	No
Oxidising properties	Not relevant. The mixture is not an oxidising material.
Comments	Not determined means the product was not tested for these properties. Not relevant means that these properties do not apply for this type of mixture due to its chemical properties.

9.2. Other information

Refractive index	Not determined.
Particle size	Not relevant.
Molecular weight	Not relevant.

HYDROCHLORIC ACID 1.18 S.G. LRG

Volatility	Not determined.
Saturation concentration	Not determined.
Critical temperature	Not relevant.
Volatile organic compound	Not relevant.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	Can react with acids, alkalis or oxidising agents. May react violently. Reaction with cyanides can produce hydrogen cyanide gas. Reaction with metals can produce hydrogen gas which can form explosive atmospheres. Will corrode metals, some plastics and rubber. Ensure any packaging used to contain the mixture is compatible.
-------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

10.2. Chemical stability

Stability	Stable when stored in sealed container at normal temperatures and in a suitable location.
------------------	-------------------------------------------------------------------------------------------

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Hazardous reactions can occur with materials as described in 10.1. Pressure build up will be generated if a reaction occurs in the sealed container with materials producing gaseous products, for example metals or oxidising agents. Heat will be generated on reaction with alkalis, oxidising agents or other incompatible materials. Do not allow contamination or reaction of the product outside the intended use. Will not polymerise.
-------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

10.4. Conditions to avoid

Conditions to avoid	Avoid direct sunlight and moisture. Avoid heat and freezing conditions. Avoid storage with oxidising agents. Avoid storage with incompatible materials. It is advisable to store the product within some form of containment to prevent spillages reaching drainage systems. Avoid storage in an unstable manner or in a situation that would result in exposure to the product. Do not allow the storage container to be left exposed to the atmosphere.
----------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

10.5. Incompatible materials

Materials to avoid	Amines. Perchloric acid Epichlorohydrin Isocyanates Some plastics, rubber and coatings. Avoid contamination with other chemicals that will affect the composition of the product. Inorganic hydrides. Alkali metals. Alkaline earth metals. Metals. Strong oxidising agents. Strong alkalis. Aldehydes. Aluminium. Fluorine Sulphides Ammonia. Ammonia compounds. Sulphuric acid.
---------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

10.6. Hazardous decomposition products

Hazardous decomposition products	None anticipated at normal temperatures. See section 5 for thermal decomposition products.
-----------------------------------------	--------------------------------------------------------------------------------------------

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

Notes (oral LD₅₀)	Scientifically unjustified.
-------------------------------------	-----------------------------

Acute toxicity - dermal

Notes (dermal LD₅₀)	Scientifically unjustified.
---------------------------------------	-----------------------------

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ vapours mg/l)	8.3
-----------------------------------------------------------------	-----

HYDROCHLORIC ACID 1.18 S.G. LRG

Notes (inhalation LC₅₀)	30 minute exposure to HCl aerosol.
<u>Skin corrosion/irritation</u>	
Animal data	Dose: 0.5ml of 370 g/l HCl in water, 4 hr, Rabbit OECD Guideline 404 1 hour and 4 hour semi-occlusive and occlusive. Corrosive
<u>Serious eye damage/irritation</u>	
Serious eye damage/irritation	Tests on rabbits, OECD Guideline 405, Acute eye Irritation / Corrosion. HCl 5% w/w was found to be irritating to eyes (Category 1, irreversible effects on the eye).
<u>Respiratory sensitisation</u>	
Respiratory sensitisation	The mixture will irritate the respiratory system when vapours are inhaled, this may lead to sensitisation in certain individuals.
<u>Skin sensitisation</u>	
Skin sensitisation	Guinea pig maximization test (GPMT) - Guinea pig: OECD Guideline 406 (Skin sensitisation). Not sensitising.
<u>Germ cell mutagenicity</u>	
Genotoxicity - in vitro	Gene mutation:: Positive with metabolic activation. Mouse lymphoma cells.
Genotoxicity - in vivo	Scientifically unjustified. Industry - Dermal; Long term systemic effects 22 mg/kg/day:
<u>Carcinogenicity</u>	
Carcinogenicity	Not applicable. No carcinogenic effects. Not a carcinogen.
<u>Reproductive toxicity</u>	
Reproductive toxicity - fertility	Scientifically unjustified. - Industry - Dermal; Long term systemic effects 22 mg/kg/day , Industry - Dermal; Long term systemic effects 22 mg/kg/day, Industry - Dermal; Long term systemic effects 22 mg/kg/day
Reproductive toxicity - development	No information available. Industry - Dermal; Long term systemic effects 22 mg/kg/day - Industry - Dermal; Long term systemic effects 22 mg/kg/day: Industry - Dermal; Long term systemic effects 22 mg/kg/day, Industry - Dermal; Long term systemic effects 22 mg/kg/day, Industry - Dermal; Long term systemic effects 22 mg/kg/day No reliable information.
<u>Specific target organ toxicity - single exposure</u>	
STOT - single exposure	These effects will be noticed when vapours are produced and inhaled by exposed operators. Respiratory irritant effects that impair function with symptoms such as cough, pain, choking, and breathing difficulties.
Target organs	Respiratory system, lungs
<u>Specific target organ toxicity - repeated exposure</u>	
STOT - repeated exposure	LOAEL 50 ppmV/6hr/day, Inhalation, Mouse 90 day exposure.
Target organs	Respiratory system, lungs
<u>General information</u>	
Inhalation	Irritating to respiratory system. Coughing and difficulties in breathing. May cause pulmonary oedema. Chronic exposure may result in decreased pulmonary function, inflammation of the bronchi, upper respiratory tract abnormalities and nasal ulceration. May cause Restrictive Airway Dysfunction Syndrome (RADS).
Ingestion	Corrosive. Small amounts may cause serious damage. Causes burns. Nausea, vomiting. Risk of perforation of the gastrointestinal tract. Delayed effects can be scarring of the oesophagus or stomach and stricture formation causing dysphagia or gastric outlet obstruction.

HYDROCHLORIC ACID 1.18 S.G. LRG

Skin contact	Causes burns. Burns may leave scarring of the skin.
Eye contact	Causes burns. Risk of serious damage to eyes. A single exposure may cause the following adverse effects: Corneal damage. Delayed effects can be conjunctivitis, cataracts and glaucoma.
Acute and chronic health hazards	Above 5ppm irritation of the respiratory system. May produce chemical pneumonitis.
Target organs	Respiratory system, lungs
Medical symptoms	Irritation of eyes and mucous membranes. Burning sensation to skin. Burning sensation in mouth. Coughing and difficulties with breathing. Nausea, vomiting.

SECTION 12: Ecological Information

Ecotoxicity The product may affect the acidity (pH) of water which may have hazardous effects on aquatic organisms.

12.1. Toxicity

Acute toxicity - fish LC₅₀, 96 hours: pH 3.25 - 3.5 Industry - Dermal; Long term systemic effects 22 mg/kg/day, Lepomis macrochirus (Bluegill)
Freshwater, semi-static.

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: pH 4.92 , Daphnia magna
OECD Guideline 202.
Static, freshwater.

Acute toxicity - aquatic plants EC₅₀, 72 hours: pH 4.7 ,
OECD Guideline 201 (Algae Growth Inhibition Test) performed on Chlorella Vulgaris.
Static, freshwater.

Acute toxicity - microorganisms EC₅₀, 3 hours: pH 5.0 - 5.5 , Activated sludge
OECD Guideline 209: Activated Sludge, Respiration Inhibition Test.
Static, freshwater.

Acute toxicity - terrestrial Not available.
No supplied or registered information

Chronic toxicity - fish early life stage Not available.
No supplied or registered information

Short term toxicity - embryo and sac fry stages Not available.
No supplied or registered information

Chronic toxicity - aquatic invertebrates Scientifically unjustified.

Toxicity to soil No registered or supplied information.

Toxicity to terrestrial plants No registered or supplied information.

12.2. Persistence and degradability

Persistence and degradability The product is not biodegradable. Hydrochloric acid dissociates completely in water and soil to form chloride ions and hydroxonium ions. Minerals in the soil will help to neutralise the acid. Hydrochloric acid is an inorganic compound and not biodegradable.

Phototransformation Not relevant.
Hydrochloric acid is an inorganic compound with no nitrogen groups, hydroxide groups, double bonds, triple bonds or aromatic rings. It dissociates readily when dissolved in atmospheric moisture therefore an estimation of phototransformation is not practical.

HYDROCHLORIC ACID 1.18 S.G. LRG

Stability (hydrolysis)	Not relevant. Hydrochloric acid is not hydrolysed.
Biodegradation	Scientifically unjustified. Hydrochloric acid is not biodegradable as it dissociates in contact with water and soil water.
Biological oxygen demand	Not relevant.
Chemical oxygen demand	Not relevant.

12.3. Bioaccumulative potential

Bioaccumulative potential	The product is not bioaccumulating. Study scientifically unjustifiable.
Partition coefficient	The product contains mainly inorganic substances which are not biodegradable.

12.4. Mobility in soil

Mobility	Minerals in the soil tend to neutralise acid contamination however larger or continuous emissions may lead to the product travelling into groundwater. As the product travels further into the soil the increased contact raises the pH to make it less acidic.
Adsorption/desorption coefficient	Scientifically unjustified. Test methods are not applicable for molecules that dissociate. Following dissociation ions are expected to undergo ion exchange with the soil.
Henry's law constant	Not determined.
Surface tension	Not available. No supplied or registered information

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment	This product does not contain any substances classified as PBT or vPvB.
-------------------------------------------	-------------------------------------------------------------------------

12.6. Other adverse effects

Other adverse effects	Reaction with hypochlorites can produce chlorine gas. Will affect drinking water supplies. May cause a local pH change in water systems which can affect aquatic organisms. May effect germination and growth rates of plants if soil contamination occurs.
------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information	Any waste material is classed as hazardous waste, it should only be disposed of through licenced waste handlers and treatment sites. Do not allow unauthorised disposal to the environment. If operators are exposed to vapours during the disposal process then suitable respiratory protection should be worn. All other personal protective equipment as described in section 8 should be worn.
Disposal methods	Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. Uncleaned empty containers should be treated as hazardous waste. Neutralisation is recommended before disposal, this should be carried out by an approved waste treatment company. When the material is to be treated on site, this should be done with an aqueous slurry of sodium carbonate. BE AWARE THAT HEAT WILL BE GENERATED AND A VIOLENT REACTION MAY OCCUR. ALWAYS WEAR PROTECTIVE CLOTHING AND EQUIPMENT AS SPECIFIED IN SECTION 8. Waste material should not be disposed of directly to drain. Avoid unauthorised disposal. Do not dump illegally onto land or into water. When dealing with waste always consider the waste management hierarchy of Prevention, Preparation for re-use, Recycling, Recovery and Disposal. It is advisable to minimise waste at source if possible, then re-use, recover or recycle wherever possible before considering waste disposal options.

SECTION 14: Transport information

HYDROCHLORIC ACID 1.18 S.G. LRG**14.1. UN number**

UN No. (ADR/RID)	1789
UN No. (IMDG)	1789
UN No. (ICAO)	1789

14.2. UN proper shipping name

Proper shipping name (ADR/RID)	HYDROCHLORIC ACID
Proper shipping name (IMDG)	HYDROCHLORIC ACID
Proper shipping name (ICAO)	HYDROCHLORIC ACID
Proper shipping name (ADN)	HYDROCHLORIC ACID

14.3. Transport hazard class(es)

ADR/RID class	8
ADR/RID label	8
IMDG class	8
ICAO class/division	8

Transport labels**14.4. Packing group**

ADR/RID packing group	II
IMDG packing group	II
ICAO packing group	II

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user

EmS	F-A, S-B
Emergency Action Code	2R
Hazard Identification Number (ADR/RID)	80
Tunnel restriction code	(E)

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

HYDROCHLORIC ACID 1.18 S.G. LRG

National regulations	Control of Substances Hazardous to Health Regulations 2002 (as amended).
EU legislation	Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended). Regulation (EU) 453/2010.
Guidance	Workplace Exposure Limits EH40. Industry - Dermal; Long term systemic effects 22 mg/kg/day ECHA Guidance on the compilation of safety data sheets 2014.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out. Information from the manufacturer of the raw material has not been received regarding Chemical Safety Assessments, Exposure Scenarios or a Chemical Safety Report.

SECTION 16: Other information

General information	This datasheet is not intended to be a replacement for a full risk assessment, these should always be carried out by competent persons. Toxicological and ecotoxicological information has been taken from the ECHA website of registered substances.
Key literature references and sources for data	Raw material safety data sheets. Web-based literature. ECHA website. Health Protection Agency Information.
Revision comments	Change to section 15
Revision date	29/04/2016
Revision	3
Supersedes date	30/07/2015
SDS number	11757
Risk phrases in full	R34 Causes burns. R37 Irritating to respiratory system.
Hazard statements in full	H290 May be corrosive to metals. H314 Causes severe skin burns and eye damage. H318 Causes serious eye damage. H335 May cause respiratory irritation.